



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

IMANARI et al.

Serial No.: 10/667,362

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Group Art Unit: 1732

Examiner: Allan R. Kuhns

For: A POLYPROPYLENE RESIN HOLLOW MOLDED FOAM ARTICLE AND A PROCESS FOR THE PRODUCTION THEREOF

APPENDIX A

Please amend the claims as indicated according to 37 C.F.R. \$ 1.121 concerning a manner for making claim amendments.

- 1. (Withdrawn) A polypropylene resin hollow molded foam article comprising a polypropylene resin foam layer, formed by placing a softened cylindrical foam in a metal mold, wherein the melt tension at 230°C of the polypropylene resin that forms said foam layer is at least 10mN and less than 49mN, and the apparent density of said foam layer is no more than 0.3 g/cm³.
- 2. (Withdrawn) The polypropylene resin hollow molded foam article according to Claim 1, having a resin layer on the outside and/or the inside of the foam layer.
 - 3. (Withdrawn) The polypropylene resin hollow molded foam

article according to claim 1, wherein the hollow molded foam is molded by blowing a gas into the interior of a cylindrical foam.

- 4. (Currently amended) A process for the production of a polypropylene resin hollow molded foam article, in which a cylindrical foam having a foam layer is formed by extruding from a die a foamable molten resin comprising a base resin containing a foaming agent, and then placing said cylindrical foam in a metal mold while in a softened state, wherein the base resin is one selected from among the following (i), (ii), (iii), and (iv):
- (i) a resin composed of at least 20 wt% and less than 70 wt% (a) polypropylene resin with a melt tension of at least 98 mN at 230°C and a melt flow rate of 0.5 to 15 g/10 minutes at 230°C and over 30 wt% and no more than 80 wt% (b) polypropylene resin with a melt tension of less than 30 mN (excluding 0) at 230°C and a melt flow rate of 2 to 30 g/10 minutes at 230°C (the combined amount of (a) and (b) being 100 wt%);
- (ii) a resin composed of 30 to 70 wt% (c) polypropylene resin with a melt tension of at least 30 mN and less than 98 mN at 230°C and a melt flow rate of 2 to 15 g/10 minutes at 230°C and 30 to 70 wt% (b) polypropylene resin with a melt tension of less than 30 mN (excluding 0) at 230°C and a melt flow rate of 2 to 30 g/10 minutes at 230°C (the combined amount of (c) and (b) being 100 wt%);

(iii [[]]] _) a resin composed of at least 20 wt% and less than 70 wt% (a) polypropylene resin with a melt tension of at least 98 mN at 230°C and a melt flow rate of 0.5 to 15 g/10 minutes at 230°C and over 30 wt% and no more than 80 wt% (c) polypropylene resin with a melt tension of at least 30 mN at 230°C and less than 98 mN and a melt flow rate of 2 to 15 g/10 minutes (the combined amount of (a) and (c) being 100 wt%) at 230°C;

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(iv) a resin composed of (a) a polypropylene resin with a melt tension of at least 98 mN at 230° C and a melt flow rate of 0.5 to 15 g/10 minutes at 230° C, (b) a polypropylene resin with a melt tension of less than 30 mN (excluding 0) at 230° C and a melt flow rate of 2 to 30 g/10 minutes at 230° C, and (c), a polypropylene resin with a melt tension of at least 30 mN and less than 98 mN at 230° C and a melt flow rate of 2 to 15 g/10 minutes at 230° C, with (a) accounting for 5 to 65 wt%, (b) for 30 to 78 wt%, and (c) for 5 to 65 wt% (with the combined amount of (a), (b), and (c) being 100 wt%), and said resin having a composition within the bounds of a quadrangle ABCD (including on the lines of the quadrangle) drawn by connecting with straight lines the: four points A (17, 78, 5), B (5, 72, 23), C (5, 30, 65), and D (65, 30, 5) which are component coordinates (x, y, z) where the polypropylene resin (a) component is given as x wt%,

the polypropylene resin (b) component is given as y wt%, and the polypropylene resin (c) component is given as z wt% in a triangular component graph in which the upper vertex of a regular triangle is marked as 100 wt% polypropylene resin (a), the lower left vertex as 100 wt% polypropylene resin (b), and the lower right vertex as 100 wt% polypropylene resin (c).

- 5. (Original) The process for the production of a polypropylene resin hollow molded foam article according to Claim 4, wherein the cylindrical foam is a multilayer cylindrical foam having a resin layer on the outside and/or inside of the foam layer, obtained by co-extruding, a foamable molten resin containing a foaming agent, and a non-foamable molten resin containing no foaming agent.
- 6. (Currently amended) The process for the production of a polypropylene resin hollow molded foam τ article according to Claim 4, wherein the hollow molded foam is obtained by blowing a gas into the interior of a cylindrical foam placed in a metal mold.
- 7. (Previously presented) The process for the production of a polypropylene resin hollow molded foam article according to Claim 4, wherein the foaming agent is a physical foaming agent

containing carbon dioxide.

- 8. (Withdrawn) The polypropylene resin hollow molded foam article according to claim 2, wherein the hollow molded foam is molded by blowing a gas into the interior of a cylindrical foam.
- 9. (Previously presented) The process for the production of a polypropylene resin hollow molded foam, article according to Claim 5, wherein the hollow molded foam is obtained by blowing a gas into the interior of a cylindrical foam placed in a metal mold.
- 10. (Previously presented) The process for the production of a polypropylene resin hollow molded foam article according to Claim 5, wherein the foaming agent is a physical foaming agent containing carbon dioxide.
- 11. (Previously presented) The process for the production of a polypropylene resin hollow molded foam article according to Claim 6, wherein the foaming agent is a physical foaming agent containing carbon dioxide.
 - 12. (Previously presented) The process for the production of

a polypropylene resin hollow molded foam article according to Claim 9, wherein the foaming agent is a physical foaming agent containing carbon dioxide.